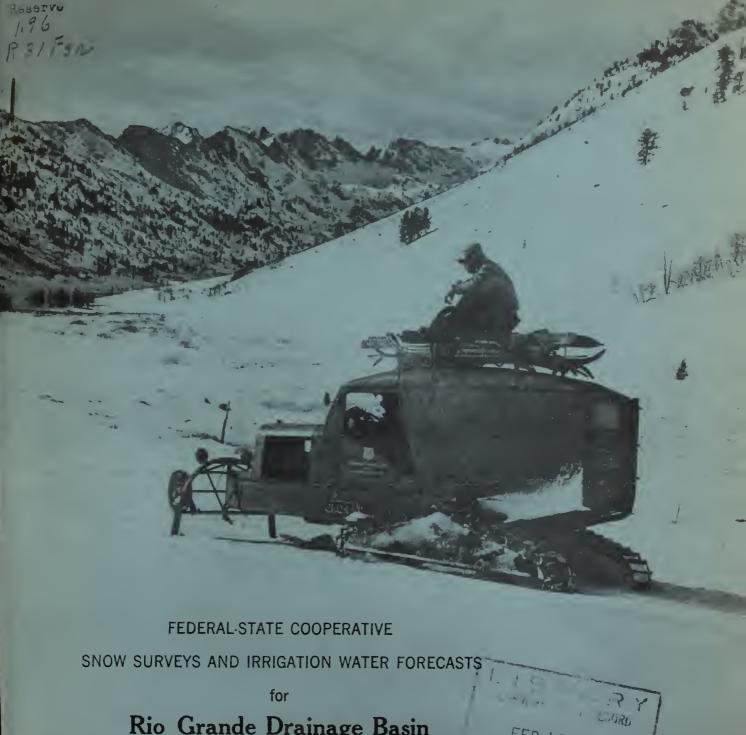
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Rio Grande Drainage Basin

By

Division of Irrigation, Soil Conservation Service United States Department of Agriculture and Colorado Agricultural Experiment Station

Data included in this report were obtained by the agencies named above in cooperation with the U.S. Forest Service, National Park Service, State Engineers of Colorado, Wyoming and New Mexico and other Federal, State and local organizations.

As of FEB. 1, 1950



Water Supply Outlook

Rio Grande and Canadian Drainage Basins

February 1, 1950

The water supply outlook for irrigated areas served by the Rio Grande and its tributaries in San Luis Valley is slightly above normal. With the exception of local areas the mountain snow cover is somewhat under last year which was the maximum of record for February 1.on many courses. Along the Sangre de Cristo range to the east of the valley snow water content is normal at high elevations and less at medium and lower levels with no snow below 9,000 feet at the first of the month. On northern New Mexico tributaries, the snow cover is about 80 percent of normal. Soil moisture conditions are dry throughout the drainage except at some higher elevations.

RIO GRANDE

Snow accumulation along the Continental Divide near Wolf Creek Pass is relatively high. It is about 40 percent above normal for this date. This appears to be a local condition since at Cumbres Fass snow cover is below average and very low at Cochetopa and Foncha passes. On the headwaters of the Culebra River to the east of the valley the snow cover is near average. Precipitation in the valley during the fall and early winter months has been about 50 percent of average and soil moisture conditions are described as dry. Some snow in the valley has been reported since February 1. Storage in irrigation reservoirs is well above last year at this time.

On the headwaters of the Rio Chama the snow cover is 86 percent of normal and about one-half of February 1, 1949. Elsewhere in northern New Mexico it is about 80 percent of average which is similar to conditions last year in this area. Soil moisture conditions are reported as fairly good at higher elevations but dry in the Middle Rio Grande area. Storage in El Vado reservoir is now 164,000 acre feet as compared to 147,000 a year ago. This is about 100,000 acre feet above the past ten-year average.

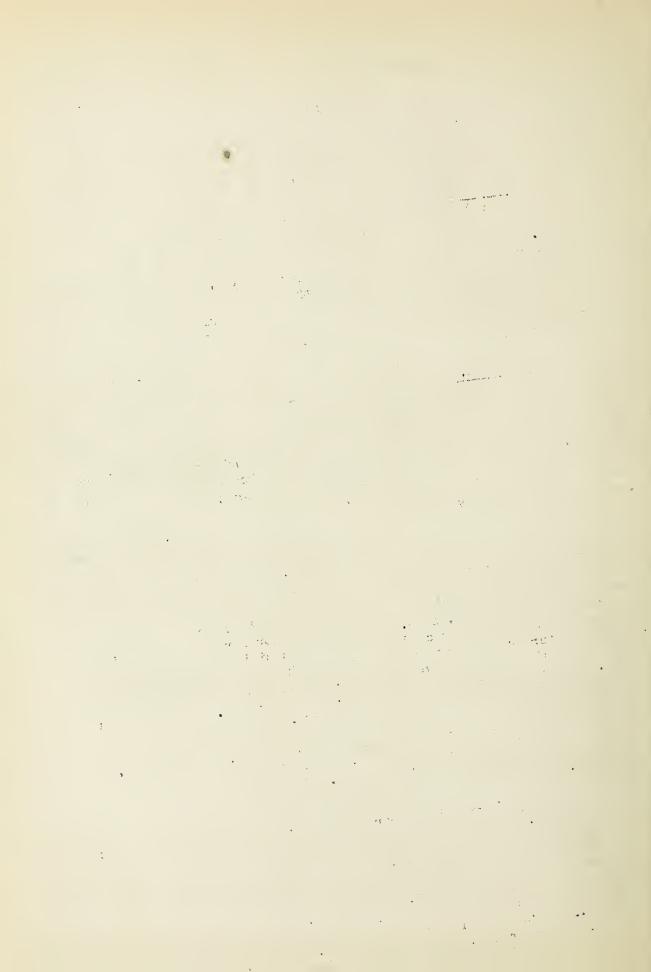
The combined storage in Elephant Butte and Caballo is 847,000 acre feet, a 200,000 acre-foot increase over February 1, 1949. Frecipitation in the lower Rio Grande Valley has been below normal. Soil moisture conditions are reported as dry.

On the headwaters of the Pecos River near Santa Fe the snow water content is 75 percent of average.

CANADIAN RIVER

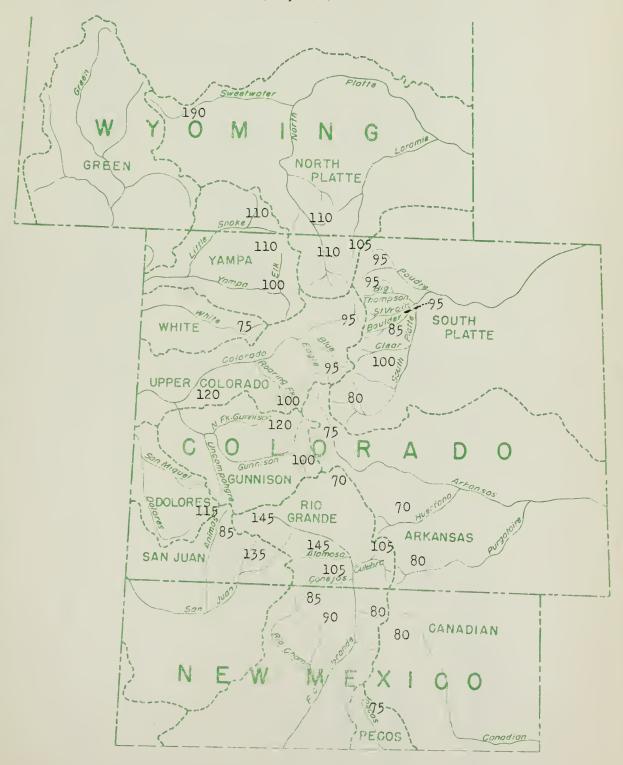
On the tributaries to the Canadian River the snow water content measured on the courses is about 70 percent of normal. Very little snow has fallen at medium elevations. Conchas reservoir has 225,000 acre feet in storage as compared to 307,000 a year ago. On the Tucumcari project, precipitation has been deficient and soil moisture and crop conditions are described as fair.

Miscellaneous Series Paper No. 452, Colorado Agricultural Experiment Station



WATER CONTENT OF SNOW ON THE WATERSHEDS OF PLATTE, ARKANSAS, UPPER COLORADO AND RIO GRANDE BASINS BASED ON SNOW SURVEYS MADE APPROXIMATELY FIRST DAY OF MONTH

In Fercent of Normal February 1, 1949





SNOW SURVEYS AND IRRIGATION WATER FORECASTS RIO GRANDE BASIN

STATUS OF RESERVOIR STORAGE, February 1, 1950

STREAM	RESERVOIR	USABLE CAPACITY		THOUSANDS OF ACRE FEET	OF ACRE	IN	STORAGE
				About February]	ruary l		10-year ave.
		1000 A.F.	1950	1949	1948	1947	1939-1948
PTO GRANDE					•		
-	Rio Grande	45.8	29.1	16.6	20.7	4.0	15.8
	Santa Maria	45.0	22.9	17.1	4.8	w,	ω.
	Sanchez	103.0	12.3	7.8	8.7	6.9	14.7
	Terrace	17.7	3.7	1.5	5.6	5.6	
	Continental	26.7	17.3%	5.2	2.6	1.3	7.5
	Elephant Butte	2273.7	9.209	496.3	η36.Ω	564.1	1075.5
	Caballo	365.0	240.2	130.5	88.1	254.7	203.8
CHAWA RIVER							
	El Vado	226.0	163.8	147.0	0.9	24.5	50.7
CANADIAN RIVER							
	Conchas	0.009	225.1	307.0	348.0	307.6	252.6
PECOS RIVER							
	Alamogordo WcWillan-Avalon	148.0		25.0	26.2	12.7	16.0
		·					
				_		_	

*Some for shorter periods ***4s of $12/1/\mu9$

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	11 22		Total City Company of Company			
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SNOW SURVEYS AND IRRIGATION WATER FORECLISTS for RIO CRANDE EASIN February 1, 1950

SUMMARY OF REBRULARY I SNOW SURVEYS AND COMPARISON OF DATA WITH THAT OF PREVIOUS YEARS BY WATERSHEDS

	Nous	Snow Depth		Water	Contert		Number	ouc	now Density	×	1950 Water Content	nveat in
WATERSHEDS	Eleven			fleren			Courses	bleven			percent of	*iI
	year	1349	1949 1950	Lear	1949	1950	in	year	1949	1950	Eleven Year	
	Avg.*			AV8.*			Average	Avg.			Avg. *	1949
	Inc	Inc	In,	In.	Inc	In,	A CONTRACT OF THE PARTY OF THE	Persent	Percent	Percent		
Rio Grande (Colo) 27.8	27.8	43.4	32.5	6.7	11,0	7.8	0	214	25	2/4	11.6	. 71
Upper Rio Grande	32.9	57.6	147.7	8.0	15.0	11.5	~	24	26	214	144	77
Alamosa River	21.8	35.9	30.5	3.9	8,3	5		18	23	18	144	68
Conejos Kiver	35.2	51,6	38,3	9,3	15,1	7.6	2	56	29	25	104	79
Culebra River	26.9	33,3	26.6	6.5	7.4	6.8	-	24	22	56	104	92
Rio Grande (N.M.) 22.0	22.0	27.4	20,2	5,2	6.4	4,0	12	24	23	20	77	63
Chama River	31.1	146.5	27,1	7.8.	12.7	6,7	4	25	27	25	93	, E
Pecos River	19.0	19.8	16,2	4.4	4.3	3.3	٠,	23	22	20	75	77
Canadian River	19.9	21.9	18.6	4.4	4.7	3.6	7	22	21	19	. 82	77
*Some for shortor neriods	no inen	U										

PRECIPITATION DATA*

		December 1			
		Frecipitation	Departure	Frecipitation:	Departure
WATERSHED	STATE	October 1 to	from		from
		January 31	Normal	January	Normal
		Inches	Inches	Inches	Inches
Canadian	New Mexico	0.95	-1.66	.0.29	-0.13
kio Grande	Colorado	2.814	-2.03	0.85	-0.37
Rio Grande (N)	New Mexico	3.22	-1,11	1.12	+0.01
Rio Grande (S)	New Wexico .	1.06	-1.09	0.03	-0.38
Pecos	New Mexico	1.37	-1.91	0.11	-0.47
				The same of the case of the ca	

*Average of Delected High Elevation Stations

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RIO GRANDE DRAINAGE SNOW SURVEYS February 1, 1950

	Past Record	Yrs. of Av. Water Con-	tent(Inches)		15.6	1,8	3.9	(O	0,70	11.2	13.5	3.6	6,5	2.0									6.7		15.6	1,8	3.6					8.0
ements		Yrs. of			10	10	10	6	10	6	ַרו		10	6											10	10	디			*****		
Measurements	(Inches)		1948		14.0	5.2	2,5	5.2	7.0	. }	8.7	3.9	8.1	2.4									7.9		14.0	5.2	3.9					7.7
Snow Cover	ontent (1		1949		27.2	10.4	8,3	8	6.8	1	21.7	7.3	7.4	2.3			21.1					5,0	1.11		27.2	10.4	7.3					15.0
Sn	Water Content		1950		24.0	6.4	5.6	7.4	3.4		12.0	4.2	6.8	0	1	\ 	16.7	1	1	1	!	1.5	7.8		24.0	1.9	4,2	1	;	1	!	11.5
	Nous	Depth	(Inches)		97.1	28.0	30.5	36.6	15.6	-	40.1	18.0	26.6	0	1	{	68.5	1	!	1	-	8.0	32,5		97.1	28.0	18,0	1	1	1	1	47.7
	Date	of	Survey		1/31	2/1	2/1	2/2	1/31		1/28	2/1	1/31	1/30			2/2					2/1			1/31	2/1	2/1			,		
		Elev,			10001	9350	90,00	9300	9300	11500	00001	9700	10000	8200	9950	9450	10100	10300	10900	10000	9300	10003	drainage		10000	9350	9700	10300	10900	10000	9300	drainage
		Range			ES .	THIN I	五五	- GE	70%	田	至	2	105.2W	72W	马	当	됬	5	314	2E	E	3E	for		2E	导	명	3	3W	2E	18	ge for di
Location		Twb.			371	Violy	36N	33M	285	37N	32N	N TH	37.2N	29W	36N	35N	32Ñ	VIIV.	42N	NTT	TON TON	45N	Average		37N	140N	N TH	NT/	42N	NT7	LON	Averag
Loc		Sec.			7	13	15	25.	22	30	17	ω		13	22	25	24	56	~	19	32	12			7	13	∞	56	2	19	32	
	No.	and	State	COLORADO	26 Colo.	27 " .	1,7 "	11 67	74 "	11 92	77 11	80	82 "	84 "	108 "	109 "	110 "	122 "	123 "	124 "	125 "	126 "		,	26 Colo	27 "	= C3	122 "	123 "	124 "	125 "	
	Drainage Basin	and	Snow Course	Z	Wolf Creek Pass	Upper Rio Grande	Silver Lakes	River Springs	LaVeta Pass #2	Summitville	Cumbres Pass #2	Santa Maria	Culebra	Ft. Garland	Platorc	West Conejos	La Manga	Pyramid	Spr.Creek Pass	Pool Table Mt.	Lake Humphreys	Cochetopa Pass		UPPER RIO GRANDE	Wolf Creek Pass	Upper Rio Grande	Santa Maria	Pyramid	Spr.Creek Pass	Pool Table Mt.	Lake Humphreys	



RIO GRIMDE DRAIMAGE SNOW SURVEYS February 1, 1950

			Location	Sicn				Sı	Snow Cover Measurements	Measur	ements	
rainage Basin	No.					Datte	Mouc	Water Co	Water Content (Inches	nches)	Pas	Past Record
pue	and	Sec,	Twp.	Range	Elev,	of	Depth				irs.of	Av. Water Content
Show Course	State					Survey	Inches)	1950	1949	1948	Rec.	(1)
ALAMOSA RIVER												
Silver Lakes	47 Colo.	7	36N	(V)	0096	1/31	30.5	5.	8,3	2.5	10	3.9
Summitville	1 92	30	37N	田	11500		1	-	1		0	11.2
GRATE SOLTINOS			γνе	Average fo	for drainage	9 50 60	30.5	5.6	8.3	2.5		3.9
CONESCO FLI VER		7	TACC	F	0	(` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` `	-	1	1		١
oring	ty Colo.	5;	35N	크 0 ነ	9300	2/2	36.6	7.4	α Λ	2.5	0	0
Cumbres Pass #2). T	32N	ン・ 田	T0000	1/28	40,1	12.0	21.7	8	디	13.5
Platoro	10g ::	22	36N	<u></u>	9950		!					
West Conejos	100	25	35N	HT 1	94,50 ;		-	1				
La Manga	110 "	24	32N	- 王 (10100	2/2	68.5	16.7	21.12			
	-		AVE	Average for	c drainage	age	38.3	2.6	15.1	6.9		9.3
CULEBRA RIVER					_)		,				1
Culebra	82 Colo.	M	37.2N	105,2W	10000	1/31	26.6	6.8	7.4	8.14	10	6.5

				RIO	RIO GRANDE	IN NEW	MEXICO		-			
CHAMA RIVER												
Cumbres Pass #2	77 Colo.	17	32N	, SE	10000	1/28	40.1	12.0	21.7	8.7	11	13°57
Canjilon	6 M. I.	7	26N	(E	9500		1	1	80	000	0	
Pay Role	15 "	16	28N	7五	9700		35.7	6.7	12.7		0	10
Chama Divide	17 "			106.7W	7750	2/2			6.7	10	\ C	· · ·
Chamita	18.6	, ~	36.9N	106.7W	8500	2/2	7	1-		- \ - \)	こって
Bateman	2 8	ر ر		6F.	9300	1	700	2,6) 	· t	_	÷.
	ì	\	HILD	rage for			1-1-60	24		-	⊣	
PECOS PIVER			2	*** C T Q E C T OI		70 D	7.017		17.1	7.T		0.7
Ashen Grottes	N N	α	SAN	ر آج	0000	רנ/ ר	2 2 1	2 6	C	0		(
Panchinela	1 O L	ν c	NIC NIC	エント	0000	1/77) · [0.0	0,-	7,7	1 -	Y
Big Tesnones	= C) (Nool	1 L	0000	1/7	77.7	Z. J.	1 C	0 0	10	- t. 0
Callinas	1 10) ;	2001	コント コンロ	- 000 -	16/1	7.07	7.10	V.	7:0	00	۲. ل ا
art tilas	:: 63	77	NZZ	٠.	TOTOO	T/ 27			12.4	74	.7	0-17
	ores of	,	> [‡]	Average 10	ror arrage	ام ام ام ام ام ام ام ام ام ام ام ام ام ا	7 ° OT	7.7	4.3	7.7		7.7

*On adjacent drainage

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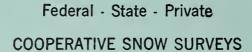
RIO GRANDE DNA ENAGE SNCW SURVEYS
February 1, 1950

	-	Content																												
	Record	AV. Water	(Inches			7			,0	, w	7.6	6.9	7.0	1-0	7.0	7.0	7.9	3.6	\ \				5.2		3.8	2.3	4.6	7.0	7-17	
rement.s	Past	Yrs. of	Rec.							20													1		6	. 0	. []	ω		
Measn	(Inches)	1	1948		3.6	3.6	3.9	-		7.7	4.2	11. 11	2.7	. T.	, w	3.6	4:3	4.1					4.2		5.4	, W	4.2	بر 8	4.7	
Snow Cover Measurements	Content (T		1949		6.9	3,6	3.0	6.8	0 00	14.2	3.4	12.4	6.7	10.01	6.3	7.	77	3.2					7.9		4.2	۲.9	3.4	9.3	7 - 47	
(c)	Water C		1950		70,	w rv	3.6	3.0	.	3.4	2.7	6.7	٠,٠	4,6		2.0	1,1	2.3	14.9		4.8	7.5	7.0		3.4	3.0	2.7	5.1	o, n	•
	Snow	Depth	(Inches)	NEW MEXTCO	124.4	14.5	17.3	20.9	` 	16.5	16.5	35.7		21.5	32.4	11.2	20.2	11.5	20.2		27.8	29.1	20.2		116.5	0.6	16.5	32.4	၀ ့ - T	
	Date	of	Survey(EIN	2/1	2/1	1/31	1/31	2/1	2/1	2/1	2/1	2/2	2/2	2/1	1/31	1/31	1/1	1/31		1/2	1/2	age	IAN RIVER		2/1	1/31	1/31	ರು ಬ್ರ	
		Llev.		O GRAND	9500	9000	91.00	9050	9500	9500	9000	9700	7750	8500	10100	8300	10000	8250	10400	9000	9500		drainage	CANADIAN	9500	9200	0006		. araınage	
		Range		RIO	15正	15E	10E	田	6E	见图	13E	五2	106.7W	106.7₩	13瓦	12E	113	11E	11E	5E	SE.	- 6E	Average for		15E	16E	13E	H	wverage ior	
Location		Twp.			28N	25N	18N	18N	26N	28N	22N	28N	36.9N	36.9N	22N	15N	1 dN	18N	18N	24N	20N	26N	ΉΛ		28N	24N	22N	22N	1106	
००५	(Sec			53	07	12	~	7	8,	23					27	17	ω	ဏ	33	34	17			∞	25	23	22		
	No,	and	State		J N.W.	= 2	†	=	11 9	5.	12 ".	15 "	17 "	18 "-	19 "	20 "	27 "	27, "	26 11	27 #	28 #	29 #			9 N.M.	10 "	12 "	13 11		
	Drainage Basin	and	Snow Course		Red River	Taos Canyon	kspun Grove	Lee Ranch	Canjilon	Hematite Park*	Tres Ritos	Pay Role	Chama Divide	Chamita	Cordova	Panchuela #2	Big Tesuque		Rio En Medio	Baca	Unemazon	Bateman			Hematite Park	Ocate Mesa	Tres Ritos*	Cordova*		

*Cn adjacent drainage.

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Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"